

REMARKS

By the present response, claims 1, 21, 26 and 29 have been amended. No claims have been added or canceled. Accordingly, claims 1-5 and 21-32 remain pending in the present application. In the Office Action mailed December 29, 2008, the Examiner rejected claims 1, 3 – 4, 21 – 24, 26 – 27, and 29 -30. Claims 2, 5, 25, 28, 31 and 32 have been objected to as depending upon rejected base claims, but would be allowable if rewritten in independent form.

Applicant respectfully responds to this Office Action.

Rejection Under 35 U.S.C. § 112

Claim 26 has been amended, addressing the asserted antecedent basis issue by deleting the word “amplified”. Amended claim 26 is believed to satisfy the requirements of Section 112.

Rejections under 35 U.S.C. § 102(b)

Claims 1, 3, 4, 21, and 29 - 30 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kenney (US Pat. No. 6,009,129). Applicant respectfully traverses these rejections and submits that Kenney does not disclose each and every feature of any one of claims 1, 3, 4, 21, 29 or 30.

As amended, claim 1 recites “A communication receiver, comprising ... a processor that processes said base band signal to produce out-of-channel received samples of one or more received signals, said received signals being outside a frequency bandwidth associated with said base band signal.” (Emphasis added).

Kenney fails to disclose the above-quoted features. In sharp contrast to claim 1, Kenney discloses a receiver with a DSP 330 that processes signals that exist only within a base band signal frequency bandwidth. Kenney’s band pass filters 302 and 308 practically remove all signals outside of the base band spectrum (see Kenney at col. 6, lines 37 – 42 and 55 – 57). The IMD interference handled by Kenney’s receiver, which interference the Examiner characterizes as being out-of-channel, is actually in-band IMD received within the base band frequency bandwidth (see Kenney at col.4, lines 27 – 29, 42 – 52 and col. 5, line 13 – 16). Thus, as taught by Kenney, the disclosed DSP 330 does not and can not perform the claimed processing quoted

above. Specifically, it plainly does not produce out-of-channel received samples of received signals, where the received signals are outside a frequency bandwidth associated with said base band signal. For at least the foregoing reasons, claim 1 as well as claims 3 and 4 by their dependency, are patentable over Kenney.

Independent claims 21 and 29 each recite features similar to those discussed above in connection with claim 1. Thus, claims 21 and 29, as well as claim 30 by its dependency from claim 29, are patentable over Kenney for at least the reasons given above for claim 1.

Independent claims 23 and 24 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Horner (US Pat. No. 5,357,544). Applicant respectfully traverses these rejections and submits that Horner does not disclose each and every feature of either claim 23 or 24.

Claim 23 recites:

“A communication method, comprising ...
mixing the first signal with a second signal at essentially the same frequency as an on-channel frequency to produce a base band signal ...
processing said base band signal to produce out-of-channel received samples, wherein the out-of-channel received samples include pilot information for possible candidate frequencies that can be used to search for pilots of candidate frequencies.”

Horner does not teach or suggest the above-quoted features of claim 23. In contrast to claim 23, Horner is directed to a method of decoding a composite FM signals (see Horner, Abstract). Nowhere does Horner teach “out-of-channel received samples” that “include pilot information for possible candidate frequencies that can be used to search for pilots of candidate frequencies”, as required by claim 23. In sharp contrast, Horner teaches a single pilot signal at 19 kHz for the FM composite signal (see e.g., Horner at FIG. 1). Thus, there is plainly no teaching and no need in Horner’s receiver to search for pilots of candidate frequencies, much less any teaching of pilot information for doing such, which information is included in out-of-channel samples.

The Office Action at paragraph 7 asserts that Horner’s processor 20 “processes said base band signal to produce out-of-channel received samples that can be used to search for pilots of candidate frequencies”. Applicant respectfully disagrees. The cited portions of Horner teach a phase tracking and phase lock process performed by the processor 20 (see Horner at col. 5, line 16 – col. 6, line 8). This processing does not include multiple frequencies, but only the single

pilot frequency, and further, it has nothing to do with searching for pilots of candidate frequencies, as required by claim 23. Instead, it has to do with locking onto the phase of a single, incoming pilot signal (see Horner at col. 5, line 16 – col. 6, line 8). One of ordinary skill in the art would readily agree that Horner's phase lock and tracking does not teach or suggest what is recited in claim 23. Thus, for at least the foregoing reasons claim 23 is patentable over Horner.

Claim 24 recites “means for processing said base band signal to produce out-of-channel received samples that can be used to search for pilots of candidate frequencies”. As discussed above in connection with claim 23, Horner does not teach or suggest anything related to searching for pilots of candidate frequencies, much less processing a base band signal to produce out-of-channel received samples that can be used to search for pilots of candidate frequencies. Thus, for at least these reasons, claim 24 is patentable over Horner.

In addition, the Office Action does not properly characterize the teachings of Horner. For example, in paragraph 7 of the Office Action, Horner's L and R channels are analogized as being on-channel signals and Horner's pilot is analogized as being an out-of-channel signal. In addition, Horner's reference signal generator 24 is characterized as producing a “first signal at essentially the same frequency as an on-channel frequency (Horner's L and R channels)”. Applicant respectfully disagrees with these characterizations as they do not accurately reflect the teachings of Horner. According to Horner's disclosure, signal generator 24 does not produce a frequency at either the L or R channel frequencies, but instead produces a reference signal at the frequency of the pilot signal (19 kHz) (see Horner at col. 4, lines 52 – 56, col. 5 lines 8 - 11). Thus, the Office Action's characterization of Horner's reference signal from generator 24 is inconsistent with the actual teachings of Horner. If Horner's actual teachings are applied in the construct given in the Office Action, the reference signal is at the same frequency as the supposed out-of-channel signal, not the supposed on-channel signal. This does not meet the requirements of claim 23, which requires “mixing the first signal with a second signal at essentially the same frequency as an on-channel frequency to produce a base band signal”.

Furthermore, the Office Action at paragraph 7 characterizes Horner's pilot cancel function 40 as being a low pass filter. Applicant respectfully disagrees. Horner's pilot cancel function 40 cancels the 19 kHz pilot signal, outputting pure L and R channels (see Horner at col. 8, lines 13 – 15 and 34 – 36). One of ordinary skill would readily understand that the pilot cancel

function 40 is plainly not a low pass filter, but instead appears to function as a high Q notch (band-stop) filter.

Rejections under 35 U.S.C. § 103(a)

Claims 22, 26 and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Horner.

Independent claim 22 recites features similar to those discussed above in connection with claim 23. These features are neither taught nor suggested by Horner, and thus, claim 22 is patentable over Horner in view of Section 103.

Claims 26 and 27 depend from claim 24. The features of claim 24 discussed above are neither taught nor suggested by Horner, and thus, since claims 26 and 27 depend from and contain all of the limitations of claim 24, they are likewise patentable over Horner in view of Section 103.

Allowable Subject Matter

Applicant would like to thank the Examiner for indicating the allowability of claims 2, 5, 25, 28, 31 and 32.

Conclusion

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of the present application are respectfully requested. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned attorney at the number provided below.

Applicant requests, under the provisions of 37 CFR 1.136(a), to extend the period for filing a reply in the above-identified application and to charge the fees for a large entity under 37 CFR 1.17(a), if it is necessary. The Commissioner is hereby authorized to charge payment of any fee(s) or any underpayment of fee(s) or credit any overpayment(s) to Deposit Account No. 17-0026.

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